REMARKS

Status of the claims:

With the above amendments, claim 1 has been amended and claim 15 has been added. Claims 1 and 3-15 are pending and ready for further action on the merits. No new matter has been added by way of the above amendments. Support for the amendment to claim 1 can be found at page 6, lines 10 to 13, from claims 4 and 5 and from the description at page 8, lines 9-12. Support for new claim 15 can be found at page 10, lines 5 to 9. Reconsideration is respectfully requested in light of the following remarks.

Improper Finality

Should the instant response not lead to an Allowance, Applicants respectfully request that the Examiner withdraw the finality of the Office Action of December 3, 2002 for the following reasons. In the Office Action of February 28, 2002, claim 1 was not rejected under 35 USC §112, second paragraph. In the response of August 28, 2002 and the supplemental response of September 17, 2002, claim 1 was not amended. In the Office Action of December 3, 2002, claim 1 was rejected under 35 USC §112, second paragraph. Thus, this is a rejection that was issued for the first time in the Office Action of December 3,

2002 that was not necessitated by amendment. For this reason, Applicants respectfully request that the Examiner withdraw the finality of the Office Action of December 3, 2002.

Rejections under 35 USC §112, second paragraph

Claims 1 and 3-14 are rejected under 35 USC §112, second paragraph as being indefinite. The Examiner asserts that it is unclear what is meant by "with the range of 5" in claim 1. Claim 1 has been amended to recite "when determined at any two points between the center and the surface of the core has a difference of 5 or less" to more clearly indicate what is meant. It is believed that with this amendment that the rejection has been obviated. Withdrawal of the rejection is respectfully requested.

Rejections under 35 USC §103

Claims 1 and 5-14 are rejected under 35 USC §103(a) as being unpatentable over Moriyama '802 (US Patent No. 5,713,802) in view of Tanaka '663 (US Patent No. 5,730,663).

Claims 1 and 3-14 are rejected under 35 USC §103(a) as being unpatentable over Moriyama '856 (US Patent No. 5,697,856) in view of Sullivan '356 (US Patent No. 6,015,356).

These rejections are traversed for the following reasons.

Present Invention

The present invention as recited in claim 1 relates to a three-piece solid golf ball comprising a core, an intermediate layer formed on the core, and a cover covering the intermediate layer. The core has a JIS-C surface hardness of 65 to 83 wherein a distribution of JIS-C hardness, when determined at any two points between the center and the surface of the core has a difference of 5 or less. The deformation is 2.8 to 5.3 mm when applying an initial load of 10 kgf to a final load of 130 kgf on the core. Moreover, the core is formed from a rubber composition comprising a base rubber, a co-crosslinking agent, an organic peroxide, and an organic sulfide compound. The organic sulfide compound is present in an amount of 0.05 to 5.0 parts by weight based on 100 parts by weight of the base rubber. Further, the intermediate layer has a Shore D hardness of 63 to 70 and has a thickness of 1.0 to 2.5 mm, the cover has a Shore D hardness of 45 to 62, and a Shore D hardness difference between the intermediate layer and the cover is 3 to 20.

Disclosure of Moriyama '802

Moriyama '802 discloses a golf ball having a two-layer cover structure with a hard inner layer and a soft outer layer. The golf ball of Moriyama '802 comprises a core (1) and a cover

formed on the core, wherein the cover has a two-layer cover structure of a hard inner cover layer (2) and a soft outer cover layer (3), and the inner cover layer (2) comprises a high-rigid polyamide resin present in an amount of not less than 5% by weight based on the total weight of the inner cover components.

Moriyama '802 fails to disclose an organic sulfide in the rubber composition of the core and fails to disclose a hardness difference that is in the range of the presently claimed invention.

Disclosure of Tanaka '663

Tanaka '663 discloses a solid golf ball which comprises a core and a cover covering the core, wherein the core has a diameter of 32.7 to 38.4 mm and a change of deformation, formed by applying to the core an initial load of 10 kg to a final load of 130 kg, of 3.5 to 6.5 mm. The cover consists of an inner layer and an outer layer in which the inner layer has a stiffness modulus of 3,500 to 6,000 kgf/cm^2 and a thickness of 1.1 to 2.5 mm and the outer layer has a stiffness modulus of 3,000 to 5,500 kgf/cm^2, which is at least 500 kgf/cm^2 lower than that of the inner layer, and a thickness of 1.1 to 2.5 mm, and both the inner layer and outer layer are made of a resinous composition compound mainly of an ionomer resin.

Tanaka '663 fails to disclose an organic sulfide in the rubber composition of the core and an outer cover layer which has the hardness properties falling within the range of the cover layer of the golf ball of the instant invention.

Disclosure of Moriyama '856

Moriyama '856 discloses a solid golf ball comprising a core and a cover, wherein the core has a trans structure content in polybutadiene of 10 to 30%. The core is produced by vulcanizing a rubber composition containing a butadiene rubber having cis structure content of not less than 90% before vulcanization, as a base rubber, wherein an amount of trans structure after vulcanization is 10 to 30% and a difference in hardness measured by a JIS-C type hardness tester between the center of the core and each point located from the center to the surface at an interval of 5 mm is not more than 10%. The rubber composition for forming the core comprises a vulcanizing agent, a filler, an organic peroxide and an organophosphorus compound, in addition to the butadiene rubber having cis structure content of not less than 90% before vulcanization.

Moriyama '856 fails to include all of the hardness properties for the core/intermediate layer/cover golf ball structure of the presently claimed invention.

Disclosure of Sullivan '356

Sullivan '356 discloses a multi-layer golf ball composition having a core, an inner cover and an outer cover producing regulation balls. A smaller and lighter core is produced and metal particles, or other heavy weight filler materials, are included in the inner cover compositions. The heavy weight filler particles, such as powdered metals, are included in a relatively thick inner cover layer (or mantle) formed from an ionomer resin of a solid, three-piece multi-layered golf ball. The size and weight of the core can thereby be reduced in order to produce an overall golf ball which meets, or is less than, the 1.62 ounce maximum weight limitation specified by the United States Golf Association. It has been found that the combination of the present invention produces a golf ball with an increased moment of inertia and/or a greater radius of gyration and thus generates lower spin due to the increased weight of the inner cover layer.

Sullivan '356 fails to disclose a golf ball with a cover layer having a Shore D hardness within the range of the golf ball of the present invention.

Removal of the Rejections over Moriyama '802, Tanaka '663, Moriyama '856 and Sullivan '356

Applicants have amended claim 1 to include the presence of an organic sulfide in the rubber composition of the core. This

feature is neither disclosed nor suggested in either Moriyama '802 or Tanaka '663. Thus, Moriyama '802 in view of Tanaka '663 cannot render obvious the instant invention because the combination of the references fails to disclose all of the features of the claimed invention. Withdrawal of the rejection is warranted and respectfully requested.

Regarding the rejection of Moriyama '856 in view of Sullivan '356, Applicants submit that the combination of these two references cannot render obvious the instant invention for the following reasons.

The following table illustrates the teachings of Moriyama '856, Sullivan '356 compared to the instant claim 1.

Elements in claim 1 of the present invention	Moriyama '856	Sullivan '356
Three-piece solid golf ball comprising core, intermediate layer and cover.	O Golf ball comprising core, intermediate layer and cover (column 4, lines 22-29). No examples present	O Golf ball comprising core, inner cover and outer cover (claim 1)
Core has JIS-C hardness of 65 to 83	O 65 to 85 (claim 8)	X No description
Core has hardness distribution within 5.	O hardness difference within 10% (claim 1)	X No description
Core has deformation of 2.8 to 5.3	O 2.9 to 3.1 mm (Table 3: compression strength)	□ 78 to 130 (Riehle)
Intermediate layer has Shore D of 63 to 70.	X No description	O 65 or more (claim 3)
Cover has Shore D of 45 to 62.	□ No description but 50:50 mixture of Hi-milan 1605 and 1706 is present[1] (column 7, lines 16-24)	O 65 or less (claim 10)
Hardness difference of (intermediate layer) - (cover) is 3 to 20	X No description	O 70-56 = 14 in column 33, Shore D value of Mantle and Cover
Core is formed from a rubber composition comprising base rubber, co-crosslinking agent, organic peroxide, and organic sulfide compound being present in an amount of 0.05 to 5.0 parts by weight based on 100 parts by weight of the base rubber.	O Column 1, line 66 to column 2, line 64 and Table 1	X No description of organic sulfide compound (column 25, line 66 to column 29, line 25; and Table in column 32)
Intermediate layer has a thickness of 1.0 to 2.5 mm.	X No description	X 0.01 to 0.200 inch (2.54 mm to 50.8 mm) claim 1

[1] Table 3 of the present specification contains a mixture of Hi-milan 1605: 1706 = 50:50 (see B and E). B contains a higher amount of tungsten powder and E contains titanium oxide and barium sulfate. Thus, the shore D hardness may be similar.

As is apparent from the above table, Moriyama '856 and Sullivan '356 do not have any description of the claimed thickness range of the intermediate layer. Therefore even if Moriyama '856 and Sullivan '356 are combined, they fail to disclose all of the elements of the instantly claimed invention.

Thus, Applicants assert that the Examiner has failed to make out a *prima facie* case of obviousness with regard to the 35 USC §103(a) rejection over Moriyama '856 in view of Sullivan '356. Three criteria must be met to make out a *prima facie* case of obviousness.

1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.
2) There must be a reasonable expectation of success.
3) The prior art reference (or references when combined) must teach or suggest all the claim limitations.

See MPEP §2142 and *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991). In particular, the Examiner has failed to meet the third element to make a *prima facie* obviousness rejection.

Moreover, Moriyama '856 has a brief description of a three-piece golf ball having an intermediate layer, but the invention of Moriyama '856 is primarily directed to a general two-piece solid golf ball without an intermediate layer. Moriyama '856 also does not have any working examples of three-piece solid golf balls and does not have any disclosure or suggestion of the thickness of the intermediate layer. Sullivan '356 does have a description of an intermediate layer, but the Sullivan '356 golf balls have a thicker intermediate layer than those of the

present invention. If the intermediate layer is thick, as in Sullivan '356, the intermediate layer has a large effect on the performance of the golf ball. In contrast, because the intermediate layer in the instant invention is thinner, the intermediate layer does not impart a large effect on the performance of the golf ball.

Moreover, the golf ball of the present invention has a cover that is softer than the intermediate layer. This feature provides the golf balls of the instant invention with good shot feel and excellent controllability in comparison to a solid two-piece golf ball. However, even if the three-piece golf ball has a softer outer layer, the golf ball does not show proper controllability and shot feel unless a hardness of the core is controlled in the proper range as explained at page 3, line 3 to page 4, line 4 of the instant written description. The suitable hardness distributions of the core for the two layered three-piece solid golf ball having a softer outer layer has been found to have excellent controllability and good shot feel. These benefits have been achieved without deteriorating the other properties, which are usually present in solid golf balls.

For the above reasons, Applicants submit that Moriyama '856 in view of Sullivan '356 cannot render obvious the instant invention. Withdrawal of the rejection is warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

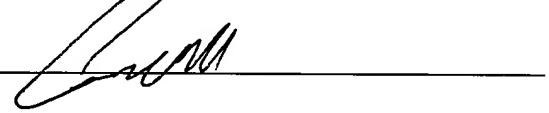
Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of $110.00 is attached hereto.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg. No. 50,990), in the Washington metropolitan area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

Andrew D. Meikle, #32,868

ADM/TBS/crt

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims have been amended as follows:

1. (Twice Amended) A three-piece solid golf ball comprising a core, an intermediate layer formed on the core, and a cover covering the intermediate layer, wherein

the core has a JIS-C surface hardness of 65 to 83 wherein a distribution of JIS-C hardness, when determined at any two points between the center and the surface of the core[, is with the range of 5] has a difference of 5 or less[,]
and a deformation of 2.8 to 5.3 mm when applying an initial load of 10 kgf to a final load of 130 kgf on the core,

the core is formed from a rubber composition comprising a base rubber, a co-crosslinking agent, an organic peroxide, and an organic sulfide compound, the organic sulfide compound being present in an amount of 0.05 to 5.0 parts by weight based on 100 parts by weight of the base rubber,

the intermediate layer has a Shore D hardness of 63 to 70 and has a thickness of 1.0 to 2.5 mm, the cover has a Shore D hardness of 45 to 62, and a Shore D hardness difference between the intermediate layer and the cover is 3 to 20.

Claim 15 has been added.